

approved manner to prevent breakage due to vibration. The thermometer well shall be closed by an approved valve attached close to the manway cover, or other approved location, and closed by a screw plug. Other approved arrangements that permit testing thermometer well for leaks without complete removal of the closure may be used.

(d) An excess flow valve as referred to in this specification, is a device which closes automatically against the outward flow of the contents of the tank in case the external closure valve is broken off or removed during transit. Excess flow valves may be designed with a by-pass to allow the equalization of pressures.

(e) Bottom of tank shell may be equipped with a sump or siphon bowl, or both, welded or pressed into the shell. Such sumps or siphon bowls, if applied, are not limited in size and must be made of cast, forged or fabricated metal. Each sump or siphon bowl must be of good welding quality in conjunction with the metal of the tank shell. When the sump or siphon bowl is pressed in the bottom of the tank shell, the wall thickness of the pressed section must not be less than that specified for the shell. The section of a circular cross section tank to which a sump or siphon bowl is attached need not comply with the out-of-roundness requirement specified in AAR Specifications for Tank Cars, appendix W, W14.06 (IBR, see § 171.7 of this subchapter). Any portion of a sump or siphon bowl not forming a part of cylinder of revolution must have walls of such thickness and be so reinforced that the stresses in the walls caused by a given internal pressure are no greater than the circumferential stress that would exist under the same internal pressure in the wall of a tank of circular cross section designed in accordance with § 179.100-6(a), but in no case shall the wall thickness be less than that specified in § 179.101-1.

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179-10, 36 FR 21345, Nov. 6, 1971; Amdt. 179-40, 52 FR 13046, Apr. 20, 1987; Amdt. 179-42, 54 FR 38798, Sept. 20, 1989; 65 FR 58632, Sept. 29, 2000; 68 FR 48571, Aug. 14, 2003; 68 FR 75760, Dec. 31, 2003]

**§ 179.100-14 Bottom outlets.**

(a) Bottom outlets for discharge of lading is prohibited, except as provided in § 179.103-3. If indicated in § 179.101, tank may be equipped with a bottom washout of approved construction. If applied, bottom washout shall be in accordance with the following requirements:

(1) The extreme projection of the bottom washout equipment may not be more than that allowed by appendix E of the AAR Specifications for Tank Cars (IBR, see § 171.7 of this subchapter).

(2) Bottom washout shall be of cast, forged or fabricated metal and shall be fusion-welded to the tank. It shall be of good weldable quality in conjunction with metal of tank.

(3) If the bottom washout nozzle extends 6 inches or more from shell of tank, a V-shaped breakage groove shall be cut (not cast) in the upper part of the outlet nozzle at a point immediately below the lowest part of the inside closure seat or plug. In no case may the nozzle wall thickness at the root of the "V" be more than 1/4-inch. Where the nozzle is not a single piece, provision shall be made for the equivalent of the breakage groove. The nozzle must be of a thickness to insure that accidental breakage will occur at or below the "V" groove or its equivalent. On cars without continuous center sills, the breakage groove or its equivalent may not be more than 15 inches below the tank shell. On cars with continuous center sills, the breakage groove or its equivalent must be above the bottom of the center sill construction.

(4) The closure plug and seat shall be readily accessible or removable for repairs.

(5) The closure of the washout nozzle must be equipped with a 3/4-inch solid screw plug. Plug must be attached by at least a 1/4-inch chain.

(6) Joints between closures and their seats may be gasketed with suitable material.

(b) [Reserved]

[29 FR 18995, Dec. 29, 1964. Redesignated at 32 FR 5606, Apr. 5, 1967, and amended by Amdt. 179-10, 36 FR 21345, Nov. 6, 1971; Amdt. 179-40, 52 FR 13046, Apr. 20, 1987; 66 FR 45186, Aug. 28, 2001; 68 FR 75760, Dec. 31, 2003]